

CLAIMS

What is claimed is:

1. A wafer carrier comprising a wire frame having three load-supporting members having wafer engaging elements.
2. The wafer carrier of claim 1 wherein the wafer engaging elements are saw-toothed profiles, grooves, or slots.
3. The wafer carrier of claim 1 wherein the wafer engaging elements of the three load-supporting members are parallelly aligned.
4. The wafer carrier of claim 1 wherein the wafer engaging elements are saw-toothed profiles having wafer contact edges.
5. The wafer carrier of claim 1 wherein each load supporting member has an elliptical cross section having a major thickness and a minor thickness.
6. The wafer carrier of claim 5 wherein each load supporting member is oriented so that the major thickness of its elliptical cross section is aligned in the load bearing direction.
7. The wafer carrier of claim 5 wherein the minor thickness of each load-supporting member is no more than about 0.5 inches.

8. The wafer carrier of claim 5 wherein the three load supporting members consist of a bottom support member and two side support members.

9. The wafer carrier of claim 8 wherein the major thickness and minor thickness of the bottom support member are larger than the major thickness and minor thickness of the two side support members respectively.

10. The wafer carrier of claim 9 wherein the minor thickness of the bottom support member is no more than about 0.5 inches.

11. The wafer carrier of claim 1 wherein the wafer carrier has a width that is smaller than the diameter of wafers being supported by the wafer carrier.

12. The wafer carrier of claim 1 wherein the wire frame is chemically resistant and is adapted to withstand thermal cycling at temperatures of 1800°C with no substantial creep deformation.

13. The wafer carrier of claim 12 wherein the wire frame is constructed of a fluoropolymer.

14. The wafer carrier of claim 12 wherein the wire frame is constructed so as to have an inner core and an outer coating.

15. The wafer carrier of claim 14 wherein the inner core is made of a fluoropolymer.

16. The wafer carrier of claim 14 wherein the inner core is made of material selected from the group consisting of ceramic, polyetherketoneketones with carbon fiber, stainless steel, and polyetheretherketones.

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17. The wafer carrier of claim 14 wherein the outer coating is a fluoropolymer.

18. The wafer carrier of claim 14 wherein the outer coating is either a suitable perfluoralkoxy or a copolymer of ethylene and chlorotrifluoroethylene.

19. The wafer carrier of claims 14 wherein the wafer engaging elements are molded into the outer coating.

20. The wafer carrier of claim 1 wherein the wafer engaging elements of the three load supporting members are a plurality of parallelly aligned saw-toothed profiles having wafer contact edges; each load supporting member has an elliptical cross section having a major thickness and a minor thickness; each load supporting member is oriented so that the major thickness of its elliptical cross section is aligned in the load bearing direction; the three load supporting members consist of a bottom support member and two side support members; the major thickness and minor thickness of the bottom support member are larger than the major thickness and minor thickness of the two side support members respectively; the minor thickness of the bottom support member is no more than about 0.5 inches; the width of the wafer carrier is less than the diameter of the wafers being supported by the wafer carrier; the wafer carrier is chemically resistant and is adapted to withstand thermal cycling at temperatures of 1800°C with

no substantial creep; the wire fame is constructed so as to have an inner core and an outer coating wherein the inner core is ceramic and the outer coating is a fluoropolymer; and the saw toothed profiles are molded into the outer coating.

5 21. A method of processing wafers comprising loading wafers in the wafer carrier of claim 1; introducing the loaded wafer carrier into a process tank; treating the wafers in the carrier with a liquid; and drying the wafers.

10 22. A process tank which comprises the wafer carrier of claim 1.

15 23. The process tank of claim 22 comprising a rinsing tank, a drying tank, or a chemical treatment tank.